

PATENT CLAIMS

1. A transducer (T) for bioacoustic signals comprising a transducer element
5 (1) having a front side and a rear side, the front side of which may establish an intimate contact with the surface of a body part, said surface being the transmitter of direct interior sound from the body, said transducer element (1) being mounted in a housing (3) subject to airborne noise, and having a surface (5) surrounding the front side of said transducing element, said element and said surrounding surface being in
10 intimate contact with the surface of said body part during use,
characterised in that the effective area (a_d) of the transducing element (1) is less than 50% of the area (a_h) of the surrounding surface (5) of the housing and in that the rear side of the transducing element is loaded by acoustical network means (7, 8) which are in communication with the surrounding air, said loading creating an
15 extinguishing relationship between airborne noise signals influencing the front and rear sides of the transducing element respectively.

2. A transducer according to claim 1, characterised in that the effective area (a_d) of the transducing element (1) fulfills the area ratio $0,50 \geq a_d/a_h \geq$
20 0,001.

3. A transducer according to claim 1, characterised in that the effective area (a_d) of the transducing element (1) fulfills the area ratio $0,20 \geq a_d/a_h \geq$
25 0,05.

4. A transducer according to claim 1 or 2, characterised in that the transducing element (1) is a compound diaphragm giving an electrical output when exposed to bending.

30 5. A transducer according to claim 1 or 2, characterised in that the transducing element (1) is a compound diaphragm giving an electrical output when exposed to differential stretching of the front side with respect to the rear side of the diaphragm.

6. A transducer according to claim 1 or 2, characterised in that the acoustical network consists of a cavity in the housing being indirectly influenced by airborne noise.

5 7. A transducer according to claim 1, characterised in that the acoustical network consists of a cavity (7) and at least one port (8) in the housing.

8. A transducer according to claim 1, characterised in that the acoustical network consists of a cylindrical conduit having essentially the same
10 diameter as the diaphragm.

9. A transducer according to claim 7, characterised in that the port is constituted by a narrow slit.

15 10. A transducer according to claim 9, characterised in that the slit is made in a material that is not wetted by water.

11. A transducer according to claim 1, characterised in that an elastic material (9) capable of transmitting mechanical vibration is provided in
20 sealing relationship between the skin and the diaphragm.

12. A transducer according to claim 1, characterised in that the acoustical network means comprises damping material.

25 13. A transducer according to claim 12 in view of claim 8, characterised in that the cylindrical conduit is provided with a damping material.

14. A transducer according to claim 12 in view of claim 7, characterised in that damping material is used as a resistive element in a
30 port (8).

15. A transducer according to claim 12, characterised in that the damping material has water-repellent qualities.